

Science in a Canning Can

Level 4 (Excellent); Level 3 (Good); Level 2 (Satisfactory); Level 1 (Insufficient)

Domain Criteria	Descriptor/Group						
D1 - Scientific understanding	The work reveals the mobilization of concepts/knowledge of Chemistry of the 11th grade: - Acid-Base - It refers to and explains the role of pH in fish conservation, identifying the most common acids used (acetic - vinegar and citrus - tomato sauce; - It refers to the protonation of AA and consequent denaturation of autolytic proteins/enzymes/bacteria - They present the equations that translate ionization reactions as well as the chemical formulas of the various substances. - Oxidation-Reduction - It refers to the importance of avoiding contact with oxygen (oxidation of lipids/unsaturated fatty acids - omega-3 in fish), referring to chain reactions that form free radicals - How olive oil works – polyphenols interrupt chain radical reactions/physical barrier with O₂ and water; - It refers to the importance of the can (choice of metal, danger of denting) in preserving the organoleptic, physicochemical, microbiological and nutritional qualities of the fish. - It is based on equations that translate the redox reactions involved.  The work reveals the mobilization of concepts/knowledge of Chemistry of the 10th grade: - Thermal Sterilization and Intermolecular Bonds - He explains that high temperatures (121°C) cause the denaturation of proteins, referring to increased vibration/Ec, weakening/breaking of H bonds and consequent inactivation (for autolysis) -Biomolecule functional groups (AA) - It presents structure formulas and correctly identifies the amino and carboxylate groups in the denaturation of proteins.						
	Total Score (4x9 = 36)						

Domain Criteria	Descriptor/Group						
D3 - Communication	 The work: - has a clear and well-structured presentation; - it is appealing and reflects aesthetic care; - reveals creativity; - integrates the storytelling methodology, presenting an engaging, coherent and relevant story for the theme; - it was carried out by effectively mobilizing digital/AI tools; - it has spelling rigor; - has appropriate scientific language, - includes the research sources and <i>Chatbots</i> used (yes 1; no 0).						
	Total Score (4x7 + 1 =29)						